UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,028	02/06/2004	Kan Frankie Fan	14329US02	7734

23446   7590   03/18/2008

MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER
MAI, KEVIN S

ART UNIT	PAPER NUMBER
2152	

MAIL DATE	DELIVERY MODE
03/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 January 2008*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-32* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-32* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *06 February 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some *   c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 32 have been examined and are pending.

Response to Arguments

2.   Applicant's arguments, see page 2 lines 19 – 25 and page 3, with respect to the rejections

of claims 1-20, 23 and 25 under 103(a) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn in view of Lindsay not being available as prior art

under 103(c). However, upon further consideration, a new ground(s) of rejection is made in

view of Diamant. Lindsay was used to introduce the idea of multiple driver instances, however

Diamant also teaches this and as such has been used in place of Lindsay.

3.   Applicant requested showing how Craft describes teaming, adding and teaming for claim

28. The prior rejection did not outline clearly how adding was supported by Craft and the

rejection has been modified to more clearly disclose adding.

4.   Applicant requested clarification on claims 21, 26 and 28.

-      As to claim 21, it is not simply because they are coupled together that teaming is

        supported. As shown in the original rejection column 5 lines 27 – 29 of Craft state

        that the port aggregation driver (intermediate driver) is there to handle port

        aggregation imposed by the switch. Port aggregation is clarified in column 1 line 27

        to be analogous to teaming. Thus it is read that the driver is responsible for the

        teaming of the INIC's. An example of this is given in column 5 lines 30 – 33, it

explains how if the switch migrates a connection from the first INIC to the second

INIC the port aggregation driver recognizes the migrations and transfers the CCB

information (destination addresses etc) from the first INIC to the second INIC.

-   As to claim 26, it is seen that the plural INICs disclosed are teamed because in

    column 2 lines 3 – 6 of Craft they are said to form an aggregate connection with a

    network node, increasing bandwidth and reliability for that aggregate connection.

    This is seen to be teaming.

-   As to claim 28, examiner recites the same as above in claim 26.

Drawings

5.   The drawings are objected to because they fail to show necessary textual labels of

features or symbols in Fig. 1 as described in the specification. For example, placing a label,

"Host Computer", with element 100 of Fig. 1, would give the viewer necessary detail to fully

understand this element at a glance. A descriptive textual label for each numbered element in

these figures would be needed to better understand these figures without substantial analysis of

the detailed specification. Any structural detail that is of sufficient importance to be described

should be labeled in the drawing. Optionally, the applicant may wish to include a table next to

the present figure to fulfill this requirement. See 37 CFR 1.84(n)(o), recited below:

> "(n) Symbols. Graphical drawing symbols may be used for conventional elements when
> appropriate. The elements for which such symbols and labeled representations are used must be
> adequately identified in the specification. Known devices should be illustrated by symbols which
> have a universally recognized conventional meaning and are generally accepted in the art. Other
> symbols which are not universally recognized may be used, subject to approval by the Office, if
> they are not likely to be confused with existing conventional symbols, and if they are readily
> identifiable.

(o) Legends. Suitable descriptive legends may be used, or may be required by the Examiner, where necessary for understanding of the drawing, subject to approval by the Office. They should contain as few words as possible."

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7.   Claims 21, 22, 24, 26, 27 – 32 are rejected under 35 U.S.C. 102(e) as being anticipated by

U.S. Patent No. 6687758 B2 to Craft et al. (hereinafter "Craft").

8.   **As to Claim 21**, Craft discloses **a system for communications, comprising:**

a first set of network interface cards comprising a second set and a third set (Figure 1 of

Craft discloses at least two INICs in blocks 22 and 25 which can be construed as the first set, and

then each individual block can be seen as the second and third set)**, the second set comprising a**

network interface card that is associated with a system that is capable of offloading one or

more connections (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at

least one intelligent network interface card (INIC) is coupled to a host computer to offload

protocol processing for multiple network connections)**, the third set comprising one or more**

network interface cards (Column 2 lines 30 – 33 of Craft discloses that although FIG. 1

illustrates an embodiment with 2 INICs each having two ports, more or less INICs each having

more or less ports are possible); **and**

an intermediate driver coupled to the second set and to the third set (Figure 1 of Craft

discloses a port aggregation driver being coupled with the first INIC (block 22) and second INIC

(block 25)), **the intermediate driver supporting teaming over the second set and the third**

set (Column 5 lines 27 – 29 of Craft discloses that the port aggregation driver is there to handle

the port aggregation requirements imposed by the switch. This reads on the intermediate driver

supporting teaming and then it was shown above that the driver is coupled to the second and

third set and thus they also support teaming).

9.   **As to Claim 22**, Craft discloses **the system according to claim 21, wherein the system**

that is capable of offloading one or more connections is associated only with the second set

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent

network interface card (INIC) is coupled to a host computer to offload protocol processing for

multiple network connections. Where at least one covers the scenario of only one, thus the

system would be only associated with the INIC that could handle offloading).

10.   **As to Claim 24**, Craft discloses **the system according to claim 21, wherein**

intermediate driver supports teaming over the first set (Column 5 lines 27 – 29 of Craft

discloses that the port aggregation driver is there to handle the port aggregation requirements

imposed by the switch. Figure 1 of Craft discloses that the driver is coupled to both the second

and third set, which makes up the first set. Thus teaming is supported over the first set).

11.   **As to Claim 26**, Craft discloses **a method for communicating, comprising:**

(a) teaming a plurality of network interface cards (Column 2 lines 3 – 4 of Craft discloses

plural network connections can be maintained via plural INIC ports and a port aggregation

switch)**; and**

(b) associating at least one network interface card of the plurality of network interface

cards with a system that is capable of offloading one or more connections (Column 1 lines

66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface

card (INIC) is coupled to a host computer to offload protocol processing for multiple network

connections)**.**

12.   **As to Claim 27**, Craft discloses **the method according to claim 26, wherein (b)**

comprises solely associating the system that is capable of offloading one or more

connections with a single network interface card of the plurality of network interface cards

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent

network interface card (INIC) is coupled to a host computer to offload protocol processing for

multiple network connections. Where at least one covers the scenario of only one, thus the

system would be solely being associated with the INIC)**.**

13.   **As to Claim 28**, Craft discloses **a method for communicating, comprising:**

teaming a plurality of network interface cards of a host computer (Column 2 lines 3 – 4 of

Craft discloses plural network connections can be maintained via plural INIC ports and a port

aggregation switch)**;**

adding an additional network interface card to the host computer, the additional network interface card supporting a system that is capable of offloading traffic from a host protocol processing stack (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. As to the card being added this is seen as the system being dynamic, such that cards can be added and then teamed with the currently running network cards. This is disclosed by Craft in the form of fail-over. Column 5 lines 53 – 55 of Craft discloses that fail-over switching mechanism are provided across the multiple INICs. Then in column 8 lines 30 – 31 it discloses the INICs getting reset due to failure. This is seen to be the same as adding because during the INIC failure the teaming is only done among the working INICs. Then after the reset the failed INIC is brought back into the team. Thus it is seen as having added the INIC)**; and**

teaming the plurality of network interface cards and the additional network interface card (Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs notwithstanding individual INIC control and processing of each fast-path connection (where fast-path connections are read as offloading). Thus the additional network card supports port aggregation notwithstanding offloading (fast-path connections))**.**

14.   **As to Claim 29**, Craft discloses **the method according to claim 28, further comprising:**

handling packets of a particular connection only via the additional network interface card,

the particular connection being maintained by the system that is capable of offloading

traffic from the host protocol processing stack (Column 3 lines 16 – 20 of Craft discloses that

the ATCP protocol stack is used to offload selected network connections to the INICs for fast-

path processing of messages corresponding to those selected connections).

15.   As to **Claim 30**, Craft discloses **the method according to claim 28, wherein the**

additional network interface card, which has been teamed with the plurality of network

interface cards, is not solely associated with the system that is capable of offloading traffic

from the host protocol processing stack (Column 5 lines 53 – 55 of Craft discloses that port

aggregation and fail-over switching mechanisms are provided across multiple INICs

notwithstanding individual INIC control and processing of each fast-path connection. This reads

on the claim since the INICs are capable of both teaming and offloading and thus are not solely

associated).

16.   As to **Claim 31**, Craft discloses **the method according to claim 28, further**

comprising:

processing packets of a particular connection via the host protocol processing stack, the

particular connection not being an offloaded connection although being maintained by the

system that is capable of offloading traffic from the host protocol stack (Column 3 lines 29 –

33 of Craft discloses that the ATCP functions such as creating and handing out fast-path

connections to INICs may be included in an integrated protocol stack that also includes

instructions for conventional protocol processing. This teaches a system that can not only

control offload traffic but can also maintain regular traffic).

17.   **As to Claim 32**, Craft discloses **the method according to claim 31, further**

comprising:

transmitting the processed packets only through the additional network interface card

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent

network interface card (INIC) is coupled to a host computer to offload protocol processing for

multiple network connections. Where at least one covers the scenario of only one, thus the

system would be only going through that INIC).

Claim Rejections - 35 USC § 103

18.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

19.   Claims 1 – 6, 12 – 15, and 17 – 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Craft and further in view of U.S. Patent No. 6941377 B1 to Diamant et al.

(hereinafter "Diamant").

20.   **As to Claim 1**, Craft discloses **a system for communications, comprising:**

a transport layer/network layer processing stack (Column 3 lines 12 – 13 of Craft discloses

that the host memory contains a conventional protocol processing stack)**; and**

an intermediate driver coupled to the transport layer/network layer processing stack via a

first miniport (Column 5 lines 27 – 29 of Craft discloses a port aggregation driver, read to be

the intermediate driver, that is disposed between the INIC device driver, read to be the miniport

driver, and the protocol processing stacks) **and** Craft does not explicitly disclose **a second**

miniport,

However, Diamant discloses this (Figure 1 of Diamant discloses an intermediary layer,

read to be the intermediate driver, connected to multiple NIC drivers. Which are then seen to be

instances of a second miniport)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the usage of teaming and a dedicated network interface card for offloading

as disclosed by Craft, with the system with two miniports as disclosed by Diamant. One of

ordinary skill in the art at the time the invention was made would have been motivated to

combine to provide an interface that can team different types of NICs. Although Craft discloses

having multiple NICs it does not disclose having individual drivers for them. Thus it is seen

Craft would be unable to team different NICs. Diamant solves this by suggesting the

intermediary layer can be used to accept many upper-layer protocols, in addition to multiple

drivers below it (Column 3 lines 13 – 20).

Craft discloses **wherein the first miniport supports teaming** (Column 5 lines 49 – 51 of Craft

discloses that the INIC device driver can control the two shown INICs with signals flowing from

the port aggregation driver. Since it receives signals from the port aggregation driver the INIC

device driver must support teaming. It is read that a miniport is a device driver and thus is read

upon by the INIC device driver), **and**

wherein the second miniport is dedicated to a system that can offload traffic from the

transport layer/network layer processing stack (Column 1 lines 66 – 67 and Column 2 lines 1

– 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a

host computer to offload protocol processing for multiple network connections)**.**

21.   **As to Claim 2**, Craft-Diamant discloses the invention as claimed as described in claim 1,

a first network interface card coupled to the intermediate driver (Figure 1 of Craft shows the

port aggregation driver being coupled with the first INIC (block 22))**; and**

a second network interface card coupled to the intermediate driver (Figure 1 of Craft shows

the port aggregation driver being coupled with the second INIC (block 25))**,**

wherein the second network interface card supports the system that can offload traffic

from the transport layer/network layer processing stack (Column 1 lines 66 – 67 and Column

2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is

coupled to a host computer to offload protocol processing for multiple network connections)**,**

and

wherein the first miniport, the first network interface card and the second network

interface card support teaming (Column 5 lines 49 – 51 of Craft discloses that the INIC device

driver can control the two shown INICs with signals flowing from the port aggregation driver.

Since it receives signals from the port aggregation driver the INIC device driver must support

teaming. It is read that a miniport is a device driver and thus is read upon by the INIC device

driver. The two INICs that are connected represent the first and second network interface cards

and because they also get signals via the INIC device driver from the port aggregation driver

they must also support teaming).

22.   **As to Claim 3**, Craft-Diamant discloses the invention as claimed as described in claim 2,

wherein the first network interface card comprises a plurality of network interface cards

(Column 2 lines 30 – 33 of Craft discloses that although FIG. 1 illustrates an embodiment with 2

INICs each having two ports, more or less INICs each having more or less ports are possible).

23.   **As to Claim 4**, Craft-Diamant discloses the invention as claimed as described in claim 2,

wherein the second network interface card comprises a remote-direct-memory-access-

enabled (RDMA-enabled) network interface card (Column 3 lines 43 – 47 of Craft discloses

that the INIC chooses whether to send a packet to the host memory or to send the packet data

directly to a destination in storage. Then in column 4 lines 40 – 41 of Craft it discloses that it is

sent by direct memory access (DMA)).

24.   **As to Claim 5**, Craft-Diamant discloses the invention as claimed as described in claim 2,

wherein the second network interface card is the only network interface card that supports

traffic from the system that can offload traffic from the transport layer/network layer

processing stack (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at

least one intelligent network interface card (INIC) is coupled to a host computer to offload

protocol processing for multiple network connections. Where at least one covers the scenario of

only one, thus that INIC would be the only network interface card that support traffic from the

offloading system).

25.   **As to Claim 6**, Craft-Diamant discloses the invention as claimed as described in claim 1,

wherein the transport layer/network layer processing stack comprises a transmission

control protocol/internet protocol (TCP/IP) stack (Column 2 lines 53 – 55 of Craft discloses

network connections, such as Transmission Control Protocol (TCP) connections, may be

initiated between the host and any of the clients using IP).

26.   **As to Claim 7**, Craft-Diamant discloses the invention as claimed as described in claim 1,

wherein the first miniport comprises a virtual miniport instance (Figure 2 of Diamant

discloses a Virtual NIC Driver which is read to be analogous to a miniport driver).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the system of claim 1 as disclosed by Craft-Diamant, with virtual drivers

as disclosed by Diamant. One of ordinary skill in the art at the time the invention was made

would have been motivated to use virtual drivers to (Diamant Column 3 lines 27 – 29) provide

opportunity to augment network interface drivers with functionality not originally planned for

network interfaces.

27.   **As to Claim 8**, Craft-Diamant discloses the invention as claimed as described in claim 7,

wherein the virtual miniport instance comprises a virtual miniport instance adapted for

teamed traffic (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be

analogous to a miniport driver that is connected to multiple NICs and the system is explained in

column 3 lines 17 – 18 of Diamant to allow for load balancing and fail-over which implies

teaming).

     Examiner recites the same rationale to combine used in claim 7.

28.   **As to Claim 9**, Craft-Diamant discloses the invention as claimed as described in claim 1,

wherein the second miniport comprises a virtual miniport instance (Figure 2 of Diamant

discloses a Virtual NIC Driver which is read to be analogous to a miniport driver).

     Examiner recites the same rationale to combine used in claim 7.

29.   **As to Claim 10**, Craft-Diamant discloses the invention as claimed as described in claim

9, **wherein the virtual miniport instance comprises an RDMA-enabled virtual miniport**

instance (Column 3 lines 43 – 47 of Craft discloses that the INIC chooses whether to send a

packet to the host memory or to send the packet data directly to a destination in storage. Then in

column 4 lines 40 – 41 of Craft it discloses that it is sent by direct memory access (DMA) and

Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport

driver).

     Examiner recites the same rationale to combine used in claim 7.

30.   **As to Claim 12**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein the second miniport supports traffic that is processed by the transport**

layer/network layer processing stack (Column 5 lines 53 – 55 of Craft discloses that port

aggregation and fail-over switching mechanisms are provided across multiple INICs

notwithstanding individual INIC control and processing of each fast-path connection. This

implies that the all INICs in the system all have teaming support regardless if or if not they

support offloading thus they are capable of supporting the traffic of the regular processing stack).

31.   **As to Claim 13**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein the second miniport supports traffic that has not been offloaded by the system**

that can offload traffic from the transport layer/network layer processing stack (Column 5

lines 53 – 55 of Craft disclose that port aggregation and fail-over switching mechanisms are

provided across multiple INICs. This implies that the multiple INICs in the system all have

teaming support and thus are capable of supporting the traffic of the regular processing stack

including traffic that has not been offloaded).

32.   **As to Claim 14**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein traffic that has been offloaded by the system that can offload traffic from the**

transport layer/network layer processing stack bypasses the transport layer/network layer

processing stack and the intermediate driver (Column 4 lines 44 – 49 of Craft discloses that

fast-path messages to be transmitted from the host to the client are diverted from an application

interface to the ATCP protocol processing stack which sends the message data to the INICs.

Where the ATCP protocol processing stack is defined in column 3 lines 17 – 18 of Craft to be

used to offload selected network connections to the INICs. Thus it is the offload system that

sends data to the INICs).

33.   **As to Claim 15**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein the intermediate driver supports teaming** (Column 5 lines 27 – 29 of Craft

discloses that the port aggregation driver is there to handle the port aggregation requirements

imposed by the switch).

34.   **As to Claim 17**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein the intermediate driver is aware of the system that can offload traffic from the**

transport protocol/network protocol processing stack (Column 5 lines 1 – 10 of Craft

discloses that since the fast-path conditions described involve offloading control and processing

of a connection to either of the INICs in association with the ports the fast-path and port

aggregation protocol need to be synchronized. Thus the port aggregation driver, which has been

read to be the intermediate driver, is synchronized, and thus aware, of the offloading control).

35.   **As to Claim 18**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein teaming supports load balancing** (Column 6 lines 35 – 37 of Craft discloses that

the port aggregation switch may change the port selection for load balancing purposes).

36.   **As to Claim 19**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein teaming supports fail over** (Column 5 lines 53 – 54 of Craft discloses that port

aggregation and fail-over switching mechanisms are provided across multiple INICs).

37.   **As to Claim 16**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein the intermediate driver comprises a network driver interface specification**

(NDIS) intermediate driver (Column 2 lines 43 – 45 of Diamant discloses an intermediary

layer using LSL or NDIS).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the system of claim 1 as disclosed by Craft-Diamant, with the usage of an

NDIS intermediate driver as disclosed by Diamant. One of ordinary skill in the art at the time

the invention was made would have been motivated to combine because although Craft does not

explicitly disclose a standard to use for its disclosed port aggregation driver it would be

beneficial to use a well known standard, such as NDIS, to increase the usability of Craft's

invention.

38.   **As to Claim 20**, Craft-Diamant discloses the invention as claimed as described in claim

1, **wherein teaming supports virtual network capabilities** (Figure 2 of Diamant discloses a

Virtual NIC Driver which is read to be analogous to a miniport driver that is connected to

multiple NICs and the system is explained in column 3 lines 17 – 18 of Diamant to allow for

load balancing and fail-over which implies teaming. If the teaming is made to work with the

Virtual NIC Drivers it must support virtual network capabilities).

Examiner recites the same rationale to combine used in claim 7.

39.   **As to Claim 23**, Craft discloses the invention as claimed as described in claim 21. Craft

does not explicitly disclose **wherein the system that is capable of offloading one or more**

connections offloads a particular connection, and wherein packets carried by the particular

offloaded connection bypass the intermediate driver.

However, Diamant discloses this (Figure 2 of Diamant discloses a Virtual NIC Driver

combined with the Virtual PS that is capable of bypassing the intermediary driver as shown).

Examiner recites the same rationale to combine used in claim 7.

40.   **As to Claim 25**, discloses the invention as claimed as described in claim 21,

a host protocol processing stack coupled to the intermediate driver via a first virtual

miniport instance and (Column 5 lines 27 – 29 of Craft discloses a port aggregation driver, read

to be the intermediate driver, that is disposed between the INIC device driver, read to be the

miniport driver, and the protocol processing stacks) **and** Craft does not explicitly disclose **a**

second virtual miniport instance,

However, Diamant discloses this (Figure 1 of Diamant discloses an intermediary layer,

read to be the intermediate driver, connected to multiple NIC drivers. Which are then seen to be

instances of a second miniport)

Examiner recites the same rationale to combine used in claim 1.

Diamant further discloses the miniport's being virtual (Figure 2 of Diamant discloses a

Virtual NIC Driver which is read to be analogous to a miniport driver)

Examiner recites the same rationale to combine used in claim 7.

wherein the first virtual miniport instance is associated with traffic of the second set and

the third set (Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over

switching mechanisms are provided across multiple INICs notwithstanding individual INIC

control and processing of each fast-path connection. Such that there exists a driver that would

team both the set that did not offload and the set that does offload. Thus that driver would be

associated with the traffic of both sets, **and**

wherein the second virtual miniport instance is associated solely with traffic of the third set

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent

network interface card (INIC) is coupled to a host computer to offload protocol processing for

multiple network connections. Where at least one covers the scenario of only one, thus the

system would be solely being associated with the INIC).

41.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Craft-Diamant as

applied to claim 1 above and further in view of "Winsock Direct and Protocol Offload on SANs"

to Microsoft. (hereinafter "Microsoft").

42.   **As to Claim 11**, Craft-Diamant discloses the invention as claimed as described in claim

1. Craft-Diamant does not explicitly disclose **wherein the system that can offload traffic from**

the transport layer/network layer processing stack comprises a Winsock Direct system

However, Microfsoft discloses this (Page 2 of Microsoft discloses that Winsock Direct

provides offload of the protocol stack).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the system of claim 1 as disclosed by Craft-Diamant, with the use of

Winsock Direct as disclosed by Microsoft. One of ordinary skill in the art at the time the

invention was made would have been motivated to utilize Winsock Direct because (Microsoft

page 1) Winsock Direct can increase system performance by freeing up CPU and memory

bandwidth resources to be used by the application.

Conclusion

Prior art(s) made of record but not relied upon:

U.S. Pub. No. 2004/0054813 A1 to Boucher et al. 'TCP Offload Network Interface

Device'

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to KEVIN S. MAI whose telephone number is (571)270-5001. The

examiner can normally be reached on Monday through Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KSM

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2152